California GARDEN

MARCH–APRIL 1980
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EVENTS

THE SAN DIEGO FLORAL ASSOCIATION

March 4, April 1, 8 — CREATIVE DESIGN IN FLOWER ARRANGING FOR THE HOME AND SHOW with Adrienne Green
Tuesdays 9:30 a.m. to 3:00 p.m. (All day workshop), Casa del Prado, Room 101, Balboa Park
Call Mrs. Hoyt for reservations (296-2757)

April 15 — APRIL SURPRISE – San Diego Floral Meeting
Tuesday 7:30 p.m., Casa del Prado, Majorca Room, Balboa Park

OTHER EVENTS/SHOWS

March 22, 23 — IKEBANA & JAPANESE ARTS FESTIVAL – San Diego Chapter 119, Ikebana International
Casa del Prado, Majorca Room, Balboa Park, San Diego
Saturday & Sunday 11:00 a.m. to 4:30 p.m. Free

March 29, 30 — BALBOA PARK AFRICAN VIOLET SOCIETY SPRING SHOW
Casa del Prado, Majorca Room, Balboa Park, San Diego
Saturday 1:00 to 5:00 p.m. Sunday 10:00 a.m. to 4:00 p.m. Free

April 12, 13 — CORONADO FLORAL ASSOCIATION FLOWER SHOW & GARDEN TOUR
Spreckels Park (Orange Ave.), Coronado
Saturday 1:15 to 6:00 p.m. (Opening ceremonies 2:30 p.m.)
Sunday 10:00 a.m. to 4:00 p.m. (Trophy presentations 3:00 p.m.) Admission $1 Children 25¢

April 12, 13 — RANCHO SANTA FE GARDEN CLUB "CELEBRATION OF FLOWERS"
Club House , Avenida de Acacias & La Granada, Rancho Santa Fe
Saturday & Sunday 11:00 a.m. to 5:00 p.m. Free

April 13 — CONVAIR GARDEN CLUB ROSE SHOW
Casa del Prado, Majorca Room, Balboa Park, San Diego
Sunday 1:00 to 5:00 p.m. Free

April 19, 20 — FALLBROOK GARDEN CLUB FLOWER SHOW "AROUND THE WORLD WITH FLOWERS"
Bowers Auditorium, Potter Jr. High School, 1943 Reche Road, Fallbrook
Saturday 2:00 to 8:00 p.m. Sunday 10:00 a.m. to 4:00 p.m. Free

April 19,20 — SAN DIEGO ROSE SOCIETY SHOW "THE LEGEND OF THE ROSE"
Conference Building, Balboa Park, San Diego
Saturday 2:00 to 9:00 p.m. Sunday 10:00 a.m. to 6:00 p.m. Admission $1

April 25, 26, 27 — SAN DIEGO COUNTY ORCHID SHOW "ORCHID POTPOURRI"
Conference Building, Balboa Park, San Diego
Fri 7:00 to 10:00 p.m. Sat 10:00 a.m. to 10:00 p.m. Sun 10:00 a.m. to 5:30 p.m. Admission $1

April 26, 27 — SAN DIEGO BONSAI CLUB SPRING SHOW
Casa del Prado, Majorca Room, Balboa Park, San Diego
Saturday & Sunday 10:00 a.m. to 4:30 p.m. Free

April 26, 27 — CARLSBAD GARDEN CLUB SPRING HOLIDAY FLOWER SHOW
Plaza Camino Real, Highway 78 & El Camino Real, Carlsbad
Saturday 10:00 a.m. to 6:00 p.m. Sunday 11:00 a.m. to 5:00 p.m. Free

May 3, 4 — HEARTLAND AFRICAN VIOLET SOCIETY FLOWER SHOW
Casa del Prado, Majorca Room, Balboa Park, San Diego
Saturday Noon to 5:00 p.m. Sunday 11:00 a.m. to 5:00 p.m. Free

May 3, 4 — VISTA GARDEN CLUB FLOWER SHOW "MEMORIES" W/SPECIAL EFFECTS & MUSIC
Vista Recreation Center, 160 Recreation Drive, Vista
Saturday 1:30 to 5:00 p.m. Sunday 10:00 a.m. to 4:00 p.m. Free

May 4 — QUAIL BOTANICAL GARDENS FUN & FUNDS FESTIVAL
Quail Botanical Gardens, Ecke Building, Encinitas
Sunday 10:00 a.m. to 4:00 p.m.

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On Selecting Roses

by *Dr. Robert G. Linck*

'Double Delight'—originated by Herbert C. Swim
A cross between 'Granada' and 'Garden Party'
(AARS photo)

EACH YEAR IN spring, later on in early summer and again in fall, you have an opportunity to attend rose shows and see roses—roses of all colors and forms. These seasons are perfect for beautiful bloom, but not the time for planting out rose bushes unless you buy potted ones. The best time for planting and the widest selection of roses is the bare-root season, January and February; yet when roses are exhibited in a show one often wants to go out and buy some of them immediately.

Often that exquisite bloom one sees at a rose show just will not be the same in the garden. There are valid reasons for this. Rose varieties are numerous and each exhibits individual characteristics. Some grow better on a windy corner of a lot, others in a sunny warm protected location. Some are more disease-resistant than others. Some bloom often, others sparingly but with long straight stems. Some varieties seen in a rose show are hard to obtain.

The show provides an opportunity to see a great many varieties at their best. If you see one you must have, ask a member of the sponsoring society about it; he will help you decide whether that one will fit into your plans and desires.

My purpose here is to discuss the selection of varieties that will be right for your garden, for the care you wish to give them, and for the results you desire.

Some general considerations about roses and rose growth are important in selection of a rose variety. Most people, especially at a show, see a certain variety and are attracted to it because of its color or its form and want one for their garden. But roses grown for exhibit often are the product of a rose grower's fanatical devotion to his hobby; the variety just will not perform as well generally without such devoted care.

Although common rose varieties are classified as floribunda, grandiflora, hybrid tea, climber, and miniature, the differences between these classes are not rigid. Miniatures, which are small in bush and flowers, and climbers, which are usually sports of regular roses that tend to bloom on long canes, will not be further discussed here. Of the others, floribundas are usually small bushes with great masses of small flowers in clusters. Hybrid tea and grandiflora roses are much alike, both being large bushes with

(Continued on Page 38)

ON SELECTING ROSES

(Cont. from Page 37)

only one or a few blooms per stem.

So, in addition to color and form it is important to consider these points:

- How big a bush do you desire or have space for?
- Do you want a wide spreading plant or a tall upright one?
- Is the location you have in mind warm or cool; coastal or inland?
- Are you interested in quantities of bloom even if on short stems, or do you prefer long-stemmed beauties for cutting?
- Will you tolerate a long repeat bloom cycle?
- What are you prepared to do to protect your roses from disease (mildew and rust) and insects, especially spider mites?
- Is fragrance important?

Now you are ready to choose the variety that is "perfect" for you. Some varieties that are commonly available, and in my view should be suitable additions to any garden, are listed here with notes on their characteristics with regard to the considerations mentioned above. Abbreviations used here are:

HT–hybrid tea
GR–grandiflora
F–floribunda
T–tall and upright
LS–large and spreading
S–small
DR–disease resistant
FRAG–fragrant

WHITE

PASCALI (HT,T,DR) One of the best though blooms are small.

HONOR (HT,T,DR) Excellent. 1980 AARS selection; recent introduction by Bill Warriner as is PRISTINE.

PRISTINE (HT,LS,DR) A beautiful rose with a pink blush on the edges of the petals.

WHITE MASTERPIECE (HT,LS,DR) Many people have enjoyed this variety. Blooms on strong thick canes with lots of thorns and beautiful deep green foliage; not great on repeat bloom, but is attractive between blooms. The bloom has substance to take heat.

SWEET AFTON (HT,T,DR,FRAG) Most fragrant white. Bloom is low petaled, that is, the bloom has so few petals that it opens fast, exhibits only a brief closed bloom phase, and then shows its stamens.

ICEBERG (F,S) One of the best white floribundas. The bush has been known to grow large, but usually is small. Long bloom cycle—a great variety.

YELLOW

SUMMER SUNSHINE (HT,T) One of the best in my view; deepest, clearest yellow of any rose. Susceptible to mildew. Blooms open fast.

IRISH GOLD (HT,T,DR) Another clear yellow, lighter hue. Heavy petaled, would do well in hotter areas.

SUNSPRITE (F,S,DR) A shocking yellow of good quality.

OREGOLD (HT,S,DR) Lovely foliage. Poor bloom color, often "muddy." If you like it, by all means try it, that is what the thrill and joy of growing roses is about.

KING'S RANSOM (HT,T) Older variety that grows well.

LEMON SPICE (HT,LS,FRAG) A clear lighter yellow of exquisite fragrance.

ORANGE

Of all colors, this is the one which, generally, does better in a hot climate than a cool one.

TROPICANA (HT,LS,FRAG) Same as FRAGRANT CLOUD.

FRAGRANT CLOUD (HT,LS,FRAG) Both of these roses develop their best color in warm weather; both are subject to mildew that is more easily controlled in areas with warmer and drier nights.

PROMINENT (GR,LS) Dense foliage, but same features as TROPICANA and FRAGRANT CLOUD.

GINGER SNAP (F,S) New floribunda to compete with an old favorite orange one, ORANGEADE.

ORANGEADE (F,LS) A rose with only 6 to 10 petals per bloom.

PINK

BEWITCHED (HT,T,FRAG) This one and DUET are best of older ones.

DUET (HT,LS,DR) Both subject to mildew.

CENTURY TWO (HT,T) Buds are a clear pink, open to stately blooms on tall strong stems. Warmer climates promote better color, but this one with its fast repeat and plentiful bloom, is worthwhile even on the coast. Subject to mildew, does well with control.

ROYAL HIGHNESS (HT,LS) Exquisite light pink, with satin sheen. Unusual rose that never fully opens, just drops its outer petals.

'Prominent'—a grandiflora with orange coloring
(AARS Photo)

'First Edition'—a floribunda with excellent growth and abundance of clustered, luminous, coral flowers (AARS Photo)

ELECTRON	(HT,LS,DR) Deep pink, lots of bloom on thorny canes covered with plentiful foliage.
FIRST EDITION	(F,S) Fine example of pink variety with smaller blooms that can completely cover the bush.
GENE BOERNER	(F,S) Same characteristics as FIRST EDITION. Beautiful form bloom showing a nice spiral, with clean circular outline.

RED

MISTER LINCOLN	(HT,T,FRAG) The most popular red; exemplifies this color class. Blooms appear to be covered with satin in bud stage, opens to large flat flowers on strong stems.
RED DEVIL	(HT,LS) Glossy foliage. Blooms do not open unless the weather is warm.
CHRISTIAN DIOR	(HT,T) Excellent red, exhibits lots of bloom of brilliant color in early stages of life of bloom. Subject to mildew.
SCARLET KNIGHT	(GR,T) Fast opening bloom that starts with a bud that is nearly black. Susceptible to mildew.
EUROPEANA	(F,S) Excellent small flower that occurs in large clusters of bloom, but quite susceptible to mildew.

LAVENDER

A color you like or you do not.	
LADY X	(HT,T,FRAG) Susceptible to rust.
STERLING SILVER	(HT,LS,FRAG) Susceptible to mildew
PARADISE	(HT,LS) Mauve with red edges to the bloom. Breathtaking.
ANGEL FACE	(F,S,FRAG) Nice mauve floribunda.

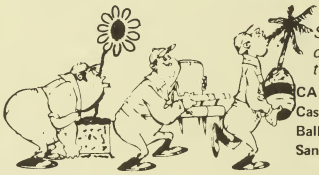
BLENDS

FIRST PRIZE	(HT,LS) Favorite rose of rosarians in the United States. Better in warmer areas. Pink.
AQUARIUS	(GR,LS) Pink with a fading into white.
GRANADA	(HT,LS) Magnificent with all the colors of a sunset. Flowers small in hot weather; susceptible to mildew.
DOUBLE DELIGHT	(HT,LS,FRAG) (Off spring of GRANADA) White. Edges of petals turn pink or red where sunlight strikes them. Color constantly changes and fragrance is magnificient. This is probably rose hybridizer Herb Swim's finest creation.

So look carefully at the shows, talk to members of the society, then select and enjoy your roses. □

The author, past president of the San Diego Rose Society, is a professor of chemistry at the University of California, San Diego, and grows exhibition roses.

MOVING?



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Dianthus

The Pink of Perfection

by *Josephine Gray*

If you have never known the joy of pinks in summer, it is high time you indulged yourself.

IN SHAKESPEARE'S DAY the name gillyflower carelessly wound the pink (*Dianthus plumarius*) and the carnation together. At that time Gerard says that pinks and carnations were so many and so various that "a great and large volume would not suffice to write of every one." The wild carnation with its five rose-crimson petals was known in the 13th century. It is thought that the Romans knew it and that it was taken with their legions all over the known world to be used for flavoring wine. Wouldn't it be interesting to know who were the gardeners for those legions? Were they sons of farmers from the warm slopes of Italy, struggling with cold rain and wind in far off Britain?

It was from the wild species that the gillyflower was developed as a "flower made pleasant and sweet by the work of man." It was so pleasant and so sweet that its appeal has lasted for generations. In the days of Shakespeare and Gerard and Anne Boleyn at Hampton Court, the gillyflower because of its spicy clove fragrance was used to season wine, and thus came by the familiar and everyday name, sops-in-wine. Pinks were used in running ribbons of color to border garden plots, or threaded along the paths of knot gardens. What a sight they must have been, and what fragrance was disturbed as they were brushed by the stiff brocade skirts of court ladies dallying along the paths.

In the late 16th and early 17th centuries there was one Master Tuggy who was a famous grower of gillyflowers in his Westminster garden. He was a friend of both Gerard and Parkinson, those early gardeners and writers, and Parkinson describes with enthusiasm some of his creations. There was "The Princess," which he describes as "the most beautiful I ever did see," and Master Tuggy's "His Rose Gilliflower," which he describes as being "different sort from all other." Many descriptions are given of the various rich colors and forms he produced. So great was his fame that after he died, his widow was able to keep his garden open for many years.

I have often wondered about the name "pink," does it come from the original color, or from the form of the flower—as though its edges were pinked with pinking shears? What sort of instrument did the Elizabethans use to pink their stiff collars and ruffs?

Old books have long treatises on the culture of gillyflower, and some of them give curious instructions for making the flower come double. In one such, the

reader is told to "take a bean and hollow it: put into it the seed of a single gillyflower, and stopping the hole with a little soft wax, set it in proper ground, and a gillyflower will spring out of it and be double and large." However, if you find that your magic is not strong enough to bring forth such a result, you may try the old method of sowing seed and be assured of success, for pinks are not usually difficult to cultivate if you remember that they are lime lovers, do not want too rich a soil, and detest leaf-mold.

They are inclined to die out after a year or two if left alone, and to avoid this, you should keep fresh stock coming along. This can be done easily by layering or by cuttings, as the plants root freely. If you plant seed, it should be sown in pans, and pricked out into flats or thumb-pots when the true leaves show. When the plants have reached suitable size and strength, they may be set out in the garden. They always look so frail that I cover them for a few days to protect against sun and wind. Old strawberry boxes (not the plastic ones) or "soldier hats" made of newspaper are good for this.

In modern times there have been a number of great names in the pink and carnation world: Allwood, Douglas, Pritchard. Mr. Allwood's varieties are crosses between carnations and pinks, and have many brilliant colors, yet are not so beautiful as those of Mr. Pritchard. These new border pinks are an advance in beauty over the old garden pinks—Her Majesty, Mrs. Sinkins. Louise Beebe Wilder says of the latter "that sweet and fat smelling dame so beruffled that she more than often manages to burst her impalement, thus quite losing countenance."

In the early days, 1665, pinks had a mission other than their use in tussiemussies and for edging paths. They had a distinct place in the pharmacopoeia of the day, and were used against hot pestilential fevers or were eaten to comfort the heart. The pink we call *Dianthus plumarius* can be had (seed) from Thompson-Morgan. This is an English firm in Ipswich, England, but which has, I believe, a branch in New England.

Old laced pinks were favorites in Victorian times. Three outstanding varieties were: *D. deltoides*, the maiden pink: *D. superbus*, a fringed pink from the Alps, *D. caesisus*, cheddar pink. These are not listed in any of my seed catalogues, and a shame, too.

The maiden pink (*D. deltoides*) makes a fine ground cover, a low growing turfy mat with small carmine–rose flowers growing 4 to 6 inches high here and there. Here in California it blooms all year long, perhaps not profusely, but enough so that one can always pick a few. Seed of the plant that I know about came from Wisley, the garden of the Royal Horticultural Society in England, so I presume seed could be had from any English seedsman. Our current pinks are without fragrance: one variety listed by Burpee is described as the old fashioned English hardy pink which leads one to believe it may be fragrant.

The popularity of the carnation and the pink has been fairly constant since early times. There was one slump in 1850. The hybridizers had become so finicky about "points" that the very men who instigated them became disgusted. A flower belonged rigidly to a class and its every flake and marking must adhere to the rigid rules laid down for each class. This became so tiresome that interest waned for many years.

If you have never known the joy of pinks in summer, it is high time you indulged yourself. A handful of pinks arranged with spikes of lavender makes a charming bouquet. Thomas Tusser, that husbandman of the late 1500's who wrote his gardening advice in rhyme, says to grow it with basil, "fine basil desireth it may be her lot, to grow as the gillyflower, trim in a pot." I am not sure that I agree with that combination but it may be worth the try. □

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By
Jim
226-1963

'SUGAR SNAP' CLIMBING TO THE SKY

If you planted 'Sugar Snap' peas in September as suggested in August-September 1979, *California Garden*, you too are enjoying this special vegetable.

Picking peas from a neighbor's orange tree is one way one grower had to harvest hers last year.

A.M.

POLE TOMATOES

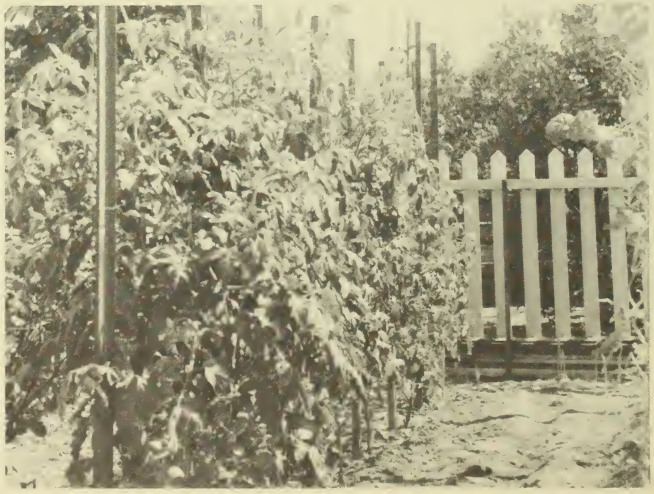
by *George James*

FRUIT FROM TOMATO vines that are supported so the fruit does not touch the ground has fewer blemishes than those that lie on the soil. There are several ways to support tomato vines and in this article I will describe how commercial tomato producers in southern California grow their fruit. This method has been tried in home gardens and found to be very satisfactory; in fact, it has advantages over some of the other methods often suggested. A fruit grown in the manner about to be described is known on the commercial produce market as a pole tomato and is prized for its good quality and appearance.

There are two distinct types of tomato vines: determinate varieties, that grow to 3 feet or less in height, and which do not need a great deal of support, and indeterminate varieties which grow to great size and are of a sprawling nature. The latter need to be supported to keep their fruit off the ground.

Pole tomatoes are grown on a continuous trellis, a few feet long in the home garden and hundreds of feet in the commercial planting. The trellises are

(Continued on Page 44)



UPPER: These young pole tomato plants have not yet been tailored into vine form

RIGHT: Mature pole tomatoes

constructed with an anchor post at each end of the row. The anchor post can be a 2- by 4-inch or larger size wooden post, or it can be an iron post as is used to support barbed wire fences. These can be bought at major hardware stores. The anchor post, wood or iron, should be 6 feet in length and installed so the top is at least 4 feet above the ground. The iron post can be driven into the ground—no hole to dig—and can be used to anchor trellises for beans or peas when not in use for tomatoes. If greater height is needed a piece of wood can be spliced to the iron. Either kind of anchor post will need to be braced against the pull caused by the weight of the mature vines.

Three strands of 18 or 20 gauge wire are stretched between the anchor posts, the first wire 15 to 18 inches above the ground. Another is stretched at the top of the posts, about 4 feet above the ground and the third one midway between these two. Garden stakes 1- by 1-inch and long enough to reach a little above the top wire when in place, are set 18 to 24 inches apart. The wires are fastened to the stakes with staples. The stakes are placed before setting the plants to avoid possible damage to the roots of the young plants.

Set a tomato plant beside each stake, and if the plants are well matured, the stems hard and bark well developed, they can be planted several inches deeper than they originally grew. Roots will soon grow from the buried stem giving the plant a stronger root system. The plants are tied to the stake, using a figure eight tie and leaving it loose enough so that the stem will not be cut as it grows.

When growth starts, the shoots that sprout at the leaves below the bottom wire should be removed, as well as the suckers at the base of the plant. Leaving these on will allow the plant to grow larger and produce more fruit, but removing them encourages the plant to produce fruit earlier. The leader or center stem of the plant is fastened to the stake as it grows and side shoots are trained to grow along each of the wires. Growth that develops above the top wire is allowed to fall over the side. Later if suckers develop at the base of the plant they should be removed. Fruit on plants trained in this manner are lightly covered with foliage so they do not sunburn yet the fruit is not so densely shaded that ripening is hampered. When pole tomatoes are harvested commercially the calyx is left on the fruit so it is sealed against loss of moisture.

Tomatoes can be planted as early as February if the plants can be protected against frost. A plastic strip, wide enough so it can be doubled and reach from the lower wire to the soil, can be held in place with clothespins and will provide the desired protection. This should be raised for ventilation, weather permitting, for several hours each day. Later in the year, when rains are likely, a wider strip of plastic sheeting can be put over the top of the plants and held in place with clothespins. Such a covering will provide some frost protection and will keep off the rain that might cause the fruit to split.

Tomatoes set their fruit within a narrow range of night temperatures; temperatures between 60 and 75 degrees F. and the best. When the night temperatures are higher or lower many tomato blossoms drop off instead of setting fruit. When this occurs portions of the stems on which the blossoms grew remain on the plant, giving the impression that some feeding insect had cut off the blooms. A product available at most garden centers, when applied to the blossoms, will cause them to develop fruit even though the temperature range is not suitable. This material can be used in either spring or fall to extend the fruiting season. Fruit resulting from this practice is identical with that set in the normal fashion, except that it may have fewer or even no seeds. Observe the instructions on the label of the container for frequency and limitations of its use.

It is wise to rotate tomato plantings to control the increase in soil-borne organisms. When their population becomes too large they inhibit the growth of the plants. A rotation that allows at least two years in other crops than tomatoes is suggested. All the materials used to make the trellis can be saved and moved to a new location each year or left in place for other crops.

The satisfaction of growing one's own tomatoes and being able to pick more unblemished fruit sooner and more easily is well worth the effort put into growing pole tomatoes. □

Ed. Note: The trellis is already set up in George James' garden and no doubt his first tomato plants are reaching for the bottom wire.

CALLA

THE SPLENDID "LILY"

Photos by BILL GUNTHER

by *Sharon Siegan*

CALLA LILIES. They are a striking sight, with their clumps of tall, arrowhead-shaped leaves; magnificent, blooming against a white fence or wall, particularly when flanked by twisted junipers or other dark, fine textured greenery, their white spathes rising in pristine elegance. Long associated with hispanic weddings and southern California funerals, callas, like the lilies for which they substitute, evoke strong feeling based on symbolism as well as appearance.

Callas, called arum-lilies by the English, are native to South Africa. They belong to the genus *Zantedeschia*, named for a botanist writing in 1825 on plants of Italy. Originally included in the genus *Calla*, they were ousted when that classification was restricted to a single species—*C. palustris* (water arum), a small swamp denizen. Although never listed as members of the genus *Arum*, callas bear striking resemblance to the true arums which are indigenous to Europe. Their hyphenated identification with lilies may result from manner of use, since they have never been included in the genus *Lilium* nor do they exhibit similarity of leaf or flower structure.

Callas (*Z. aethiopica*) seem to recall a watery past, thriving when their soil is kept comfortably damp. They can tolerate bog conditions far better than aridity, although standing water is not a requisite. Yet, if dryness be their fate, they can withstand it for several months, losing leaves and entering dormancy, until seasonal rains (or garden hose) awaken them to new growth. Its unquenchable thirst makes the calla an excellent candidate for pool and pond landscaping. In fact one nurseryman claiming fine results suggests submerging potted plants so that soil surface lies 2 to 3 inches below the waterline. Callas do make foundation plantings, particularly enhancing a fern background, but such a recommendation must be made cautiously. Because of their heavy water needs, it is wise to ensure an area of good drainage (e.g., gravel separation or other barrier) between callas and a concrete foundation.

Now available is this new hybrid calla which sports a purple spike and purple edging against a white background

(Continued on Page 46)

CALLA
(Cont. from Page 45)

Unlike many other plants, callas are not inhibited by our alkaline earth. As long as they are well watered, they will sport luxuriant foliage and bloom almost continuously for most of the year, slackening off usually during our hottest, dryest months. Preferring partial shade, they do require protection from strong sun. Callas are heavy feeders and enjoy a soil enriched by well-rotted manure, plus applications of liquid fertilizer. Given these conditions, the familiar white calla will attain three or more feet in height, with leaf blades measuring up to a foot in length. The variety 'Hercules' will do even better. And given these same conditions, the variegated, with greenish streaked spathe enveloping a golden spadix, may out-perform both. The variegated is a strong, sturdy variety, with tall, oversized leaves and flower spathes and a superior blooming record. All of the *Z. aethiopica* are pest resistant, but snails must be discouraged from feeding on their tender furled leaves and flowers. Overgrown clumps benefit from thinning, and a suggested timetable is every two or three years. Separate the rhizomes and replant in replenished earth. Callas like their soil rich, but abhor heavy clay.

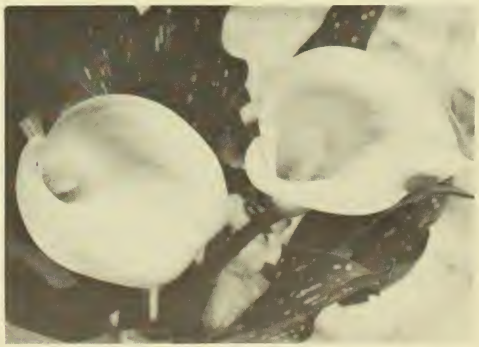
Callas also come in diminutive sizes. Although several varieties are listed, 'Little Gem' seems to be the one commonly available in area nurseries. (It is identified and sold only as "dwarf.") Standard size callas when grown from seed (or self-sown) will also appear dwarf during their first season, and may be kept that way simply by containing them in pots– the smaller the pot, the smaller the plant and flower spathe. Transplanting such seedlings into the ground will encourage normal growth and size. If in doubt about your calla's genetic potential, examine the furl of the spathe (flower bract). In the standard, regardless of specimen size, the spathe is completely overlapped. Not so for the true dwarf, which displays a noticeable gap at the base of the spathe (just at the point of emergence of the spadix or flower spike). In the case of 'Little Gem' you need look only at the leaves–if they are spotted, it is.

Z. elliottiana and *Z. rehmannii* refer to yellow and pink callas, respectively. Both are available at area nurseries, although not consistently so, and sometimes only in bulb form. They grow only slightly taller than the dwarfs, and differ somewhat in cultural needs from the white *Z. aethiopica* . Pink and yellow callas are seasonal flowers, blooming in late spring and summer. They prefer sun, grow best in pots, raised beds or contained areas and tolerate a leaner diet and watering schedule. They are decorative additions to a rock garden and delightful in small flower arrangements. A number of hybrids in tones of buff to orange to lavender have been developed but are not locally available.

The pink calla, *Zantedeschia rehmannii*, can be recognized even when not in flower by its rather long strap-shaped leaves

For an exotic look try the black calla. Ada Perry, columnist for the Sunday edition of the *San Diego Union*, refers to it as her "polite" plant because it does not suffuse the air with odor-of-carrion, as do other black/purplish varieties. The calla is not zantedeschia; it is *Arum palaestinum*– and its evil-smelling relatives are also of the genus *Arum*.

In general, cultural requirements for these arums are quite similar to those for zantedeschia; they prefer shade, a rich soil and ample moisture. Some are less tolerant of alkaline soil, so might appreciate a sprinkling of iron sulfate to lower the pH. □



The yellow calla, *Z. elliottiana*, is distinguished not only by its yellow blossom, but also by its white-spotted leaves

THE ARRANGER HAS complemented the bold shape of small calla lilies with a white container accenting the shape of the lilies. White diosma, also called breath of heaven, picks up touches of white, repeating the pure white of the design. Calla leaves and one or two schefflera leaves are added to soften the lines.

Displayed on a black base it would add beauty and serenity in any setting. *B.A.K.*

Arrangement: *Peg Kendall*
Ceramic Container: *Kay Finch*
Photo: *Betty Mackintosh*

Serenity

Do You Know This Plant?

Name:	Honey Bush, *Melianthus major*
Origin:	South Africa and India
Size & Habit:	Large (to 12 feet), coarse, fast-growing perennial herb. Sprawling or upright; can be trained.
Foliage:	Its most striking feature. Long grayish leaves divided into nine to ten strongly-toothed leaflets. Have disagreeable odor when crushed.
Flowers:	Odd, not especially attractive; reddish brown, in spikes; early spring.
Garden Use:	Accent plant in raised bed or container.

by Helen Chamlee

Editor's Note: New Feature-photograph and brief notes on one of the less known plants cultivated in southern California. Camera buffs please note—we need photographs of uncommon plants (no roses or avocados, please).

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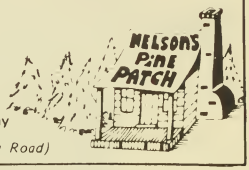

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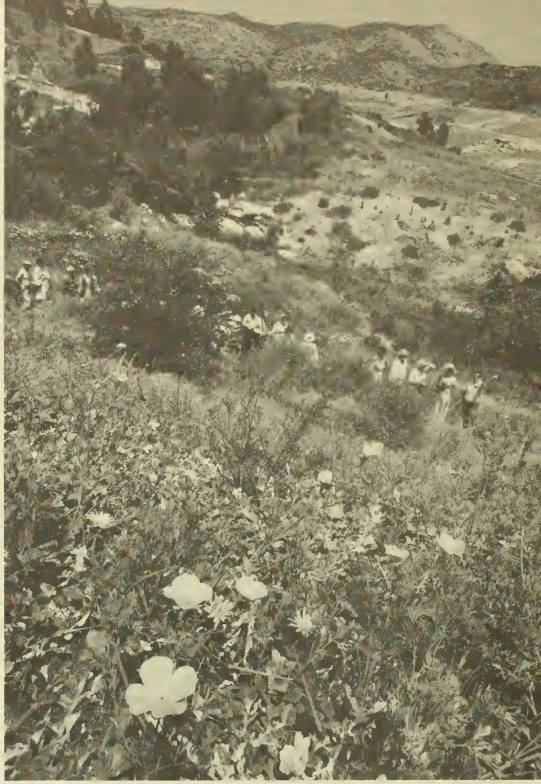
A Survival Strategy for Endangered Plants

by *Stuart H. Macdonald*



Visitors enjoying the *Helen Channlee California Native Plant Garden*

WE GENERALLY THINK of zoological gardens only in terms of animals, but the extensive plant collections of the San Diego Zoo and Wild Animal Park have turned their gardens into arboretums of international standing. In the last few years, concern over the continuing disappearance of plant species has led to a new role for these zoological gardens. Just as they serve to maintain populations of endangered animals, they provide for the survival and propagation of endangered plants. Along with seed banks and storage of genetic information, the growth and distribution of living specimens is an important means of saving wild plants from extinction. As with animals, the destruction of native habitat is the major threat. So while ecologists feel that the best place to preserve plant and animal species is in their natural ecosystems, in many cases the only hope for survival lies in the collecting of specimens for artificial breeding.

At the Wild Animal Park a program of preserving endangered plants is headed by horticulturist Jim Gibbons. During the last four years one of the park's goals has been to grow and propagate rare species and display as many as possible to the public. According to Gibbons, "The idea of collecting these plants is not to lock them up someplace but have them where people can see, and study, and even experiment with them." As part of the park's education efforts, the program of plant preservation helps make people aware of the consequences of worldwide urbanization and agricultural practices. Plants with histories of medicinal or economic use will be described, as one way to emphasize the importance of preserving plants which may have unexpected value in the future.

While many rare plants are small and homely, others delight the eye with flowers, foliage, or growth habits. To point out endangered species, plant labels will be marked with a white "E" inside a green circle. Along the Kilimanjaro Hiking Trail at the Wild Animal Park, signs explain the preservation efforts being made:

E THERE IS NO SUBSTITUTE FOR GROWTH AND REPRODUCTION THAT IS BETTER THAN THE NATURAL HABITAT, HOWEVER THERE IS A STRUGGLE IN BOTANICAL GARDENS THROUGHOUT THE WORLD TO PRESERVE, PROTECT, AND REPRODUCE SPECIMENS OF THESE ENDANGERED SPECIES IN THE HOPE THAT FUTURE GENERATIONS WILL STILL HAVE THEM AS PART OF OUR EARTHLY HERITAGE.

Just as captive breeding programs with animals have the goal of re-establishing populations in the wild, it is hoped that plants, too, will some day find permanent homes where they once were destroyed.

(Continued on Page 50)

(Cont. from Page 49)

"As a long term goal," Gibbons said, "We hope to have enough of each species being reproduced that countries can take plants back like they do some animals. The idea of collecting these plants is not just to have them here, but to preserve them and send them back where they belong."

For the present, the Wild Animal Park is trying to obtain as many rare specimens as it has room to grow. Plants come from many sources: nurseries, other arboretums, collectors, foreign governments, and as gifts from individuals. It is of primary importance to obtain plants that find the San Pasqual Valley's mediterranean climate agreeable. Since lows have ranged into the 20's this winter, the very tender true tropicals are not commonly attempted. However, this climate is much like South Africa's, with hot summers and fairly mild winters, so plants from that area are well represented. Aloes, of which the park has 139 species, are of considerable interest both for their showy flowers and because over-collection and land clearance has endangered the entire genus (see *Zoonooz*, January 1980).

Cycads are another endangered group of which the Wild Animal Park has been fortunate in receiving specimens. Like the saguaro cactus of the Sonoran desert, cycads are large and exotic-looking, they transplant successfully, and are avidly sought by illegal plant collectors and bootleggers. Both of these plants are also very slow growers, which makes them vulnerable to collectors, who have removed entire adult populations from accessible areas.

Plants of southern California and Baja California are the theme of another planting area at the Wild Animal Park. Each section is being developed as an example of a specific plant community by using microclimatic differences in slope, exposure, moisture, and temperature. These 10 communities, representing major life zones in California are:

1. Coastal sage scrub
2. North and south coastal bluffs
3. Channel Islands
4. Chaparral
5. Montane coniferous forest
6. Freshwater marsh
7. Southern oak woodland
8. Mojave desert
9. Valley grassland
10. Pinyon-juniper woodland

Helen Chamlee, for whom the native plant garden is named, is an expert on California plants with San Diego's Museum of Natural History. While she is pleased with the success of the rare Torrey Pine as a landscape plant, she points out that little attention has been given to the plants that are bulldozed by thousands of acres in southern California.

"Our coastal species are the rare and endangered plants of the future," she said. "Being in the area where these plants can be successfully propagated, we have a chance to establish them in permanent sanctuaries."

About 75 plant species are on the 1974 endangered list for San Diego County alone, but a new list being compiled will list even more. The problem is complicated by the fact that most of the natives are difficult to transplant. Many are narrow endemics, Chamlee said, meaning that special soil or microclimatic requirements make it extremely difficult to establish and propagate them in artificial surroundings. Some natives, however, have been moved successfully as mature plants in salvage operations. The California Native Plant Society has participated in these rescue missions which involve collecting plants from areas scheduled for development. One example is the coast barrel cactus, *Ferocactus viridescens*. "Most of its habitat has been urbanized," said Chamlee. "It grows only within a few miles of the coast on what has become prime land for housing." Another plant is the Mojave yucca, *Yucca schidigera*. It has also proved salvageable, but collectors should note that all yuccas are protected by state law.

A different threat endangers specimens of *Agave shawii*, which Chamlee says still exists in abundance in Baja California but grows in San Diego County only on Navy property on Point Loma.

"These plants were beginning to slide down an eroding cliff," she said. "This little population inside the Navy fence is all that is left, though it used to grow all over Point Loma."

One way that everyone can help the cause of endangered plants is to support public acquisition of valuable habitats, whether large or small. We need more wild areas like the Torrey Pines State Reserve. Private undertakings such as the Zoological Gardens and Wild Animal Park and the Audubon Society's Silverwood Wildlife Sanctuary also need our contributions and concern. Other ways to get involved are by joining the plant specialty societies, such as the orchid and cactus groups. As gardeners, we can landscape with native plants available from numerous nurseries

Aloe candelabrum—one of the 139 species of aloes in the Wild Animal Park

that specialize in native species, and we can make sure to buy nursery-grown plants and seeds rather than supporting the illegal trade in plants collected from the wild. □

Stuart H. Macdonald is a landscape architect currently working in Colorado.

Photos by San Diego Zoological Society

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PERENNIALS, GROWING IN the same soil year after year as they do, can reach normal size and beauty only if well fed.

Therefore, in preparing soils for new perennial plantings and in future maintenance, be sure to use a complete, balanced plant food if you expect best results.

For new plantings, after the soil has been prepared and leveled off, apply the plant food. Work this lightly into the soil, and the area is then ready to plant.

An application of plant food is one of the first spring tasks for the established perennial border or bed. The plant food should be applied when the mulch is removed, or, if there is no mulch, before the border is cultivated for the first time in the spring. Plentiful available plant food will give the perennial plants a stimulation in their early growth which will result in heavier stems and larger flowers. Spread the plant food as uniformly as possible between the plants, without allowing it to come in direct contact with the young growth of leaves and stems. This may be worked into the soil lightly, or it may be watered in well.

To assure an ample supply of nourishment throughout the season, make a second application six to eight weeks after the first application. □

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Beaucarnea Recurvata

by *Helen Chamlee*

YOU HAVE A choice of other names to call this plant if you do not like beaucarnea: ponytail, bottle palm, elephant foot. A mature plant bears dense clusters of long ribbony drooping leaves. Ponytail? It has a greatly swollen base. Half-buried chianti bottle? It has gray wrinkled bark and big "toes." Elephant's leg and foot?

A native of southeastern Mexico *Beaucarnea recurvata* is restricted as an outdoor plant to thermal belts in California and southern Florida. In the garden it needs well-drained soil, infrequent soakings, and a place in the sun. Small plants do well indoors, where they sit like large onion bulbs on top of the soil in their containers.

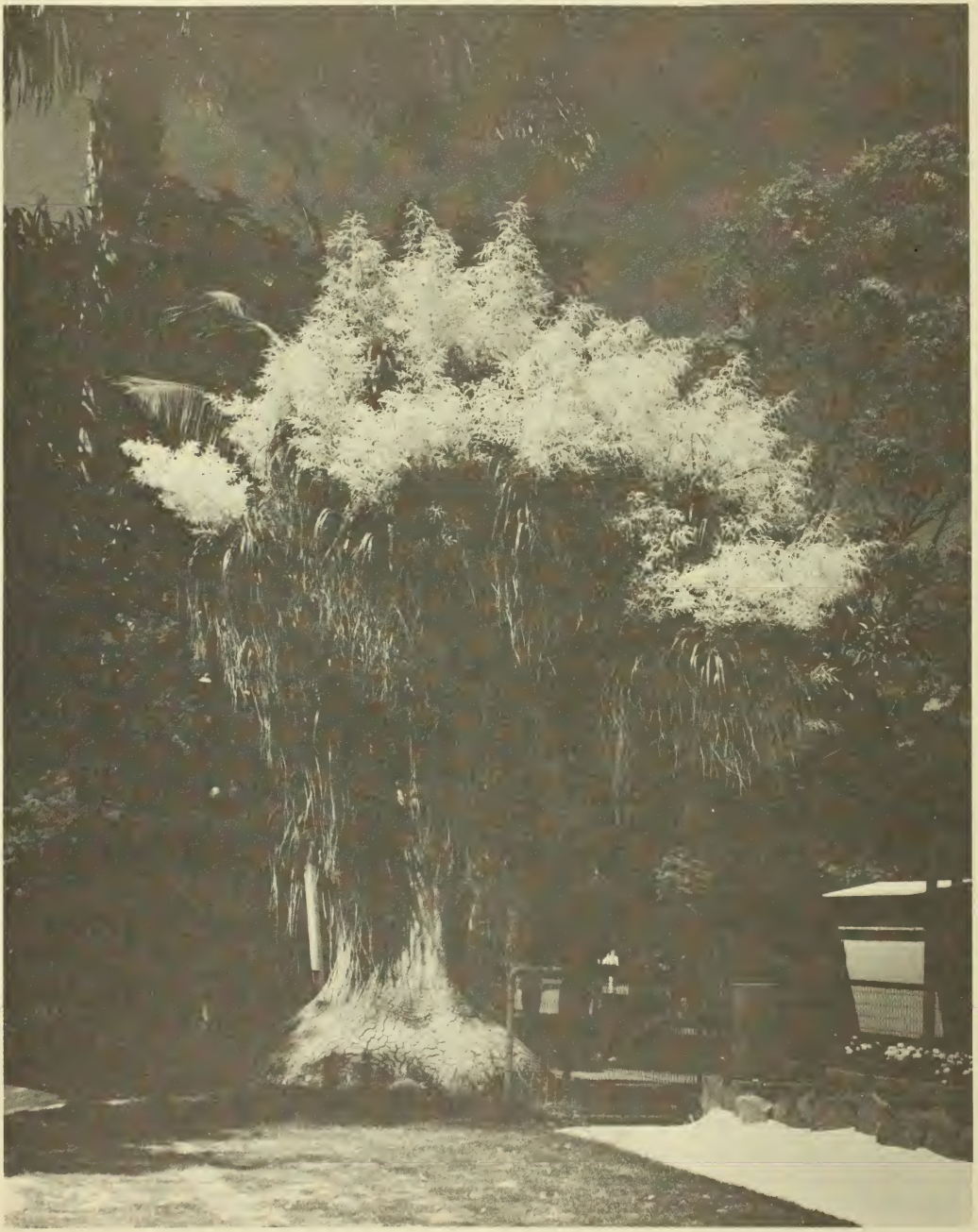
For some years the plant will be a single narrow trunk with a moplike head and great spreading base. As it grows older it becomes quite impressive, with branches near the top and a height of 20 to 30 feet. Mature plants will burst into showers of bloom in early spring.

The tiny flowers are creamy white, with six perianth segments as in lilies. Beaucarnea once was placed in the lily family as were its close relatives the yuccas and nolinas, but currently we find it in the century plant family, Agavaceae. With its great panicles of minute blooms and its flexible leaves it resembles the nolinas more closely than it does the yuccas or century plants.

The flowers are so small they are impressive only in masses. On female plants they will be succeeded by small winged capsules of pale straw color. On male plants the show of flowers is lovely but fleeting. They open, disperse their pollen, and drift to the ground all within a few days.

Such plants as beaucarnea, which are grown more for their oddity than their beauty, should be more than a little odd, and it can be truly said of beaucarnea—ponytail—bottle palm—elephant foot that it is odd indeed. □

RIGHT: Twenty-foot tall *Beaucarnea recurvata* in the grounds of the San Diego Zoo
Photo by San Diego Zoological Society



Squashes Coming Up

by *Rosalie Garcia*

THE LOWLY SQUASH has finally made it! It has achieved status and can be found on any table and in sophisticated dishes. How come? We do not call it squash any more. Something in the connotation of the word squash turned people off, especially children. It did not sound like something good to eat. Now we call them zucchini, patty pan, butternut, acorn, Hubbard, etc. Cooking experts, inspired by the Italians, have experimented and promoted squashes until they come up in exotic dishes. Hybridizers too, have worked, eliminating the bitter gourd taste and putting more sugar and juice into them to make all squashes more succulent and appetizing.

Squashes are native American vegetables, having been found in Peru and Chile by early explorers and taken to Europe. The Italians soon made them their own, recognizing their affinity for olive oil, onions, and tomatoes long before the rest of Europe would dare touch the "poisonous" tomato. Early settlers along the East Coast of the United States found the Indians cultivating and eating gourds and not minding the bitterness, but they were unpalatable to the Europeans. These tough, prolific native gourds were the forerunners of our hard shelled or winter squashes and pumpkins.

The gourd family, Cucurbitaceae, includes all the squashes and pumpkins. The main difference between pumpkins and squashes is in the stem structure. The squash has a soft, juicy, usually rounded stem even at maturity; the pumpkin has a hard, woody, ridged stem, enlarged at the point of attachment.

Seed catalogs have long divided squashes into summer and winter varieties. We know most of the summer ones as tender zucchini, patty pan, and yellow crookneck (although the hybridizers have taken the crook out of the neck of some). They are eaten when young and tender. These are the natives that have come to us by way of Italy, but originally came from Peru and Chile where the climate is similar to that of both southern California and Italy, so they have not needed to adapt.

Burpee lists in its 1980 catalog four zucchinis—two greens, one yellow, and my favorite—the plump juicy gray striped one, not so common commercially. The plants bear abundantly for about six weeks; three plants furnish enough for a family, with some left over for neighbors. Patty pans, both green and white, are best steamed and simply served with butter, pepper, and salt. Some harvest them when they are less than 2 inches in diameter, just out of the blossom, but others prefer them larger. The yellow ones, knotty and crooknecked or smooth and straight, are the sweetest and most palatable when eaten raw. Slightly cooked with a dash of dried onion (which adds flavor to all squashes), butter, salt and pepper, these squashes become a gourmet dish to go with chops, roasts, or omelets at any meal.

The winter or hard shelled squashes take up to three months to mature, usually come on in late summer and, due to their good keeping qualities and low prices, are available in our markets for many months. Farmers have learned that they keep better in storage than potatoes. One can bake, fry, steam or mash them any way potatoes can be used. They are most often served plain just with butter, but they are amenable to seasoning. Winter squash is a good source of carbohydrate that is nutritious and easily digested. I noted in a hospital stay that our good old 'Boston Marrow,' or as we call it 'Pink Banana' was served several times a week, a small cube on the plate. The dietition said she found few people were allergic to that squash while many could not eat potatoes.

Since most winter squashes grow on long vines, the smaller 'Acorn' and 'Butternut' are more popular in home gardens. Their bushy vines are decorative and take even less space when trained on a fence or trellis, but the fruits may need some support. The 'Acorn' is

often stuffed with ground meat mixtures and baked to make the basis for a meal. The fine flavored 'Butternut' and a new sort of turban-shaped version, the 'Buttercup,' cook quickly and are small enough for two or three servings.

The 'Cushaw' (a big Hubbard), a favorite in the South and even used for stock feed, is seldom seen in our markets. The more common 'Pink Banana' is available most of the year with us.

A kind of novelty is the 'Vegetable Spaghetti' or just spaghetti squash, an oblong one with a white hard shell. It grows on long vines that have only a few fruits to the vine. One can make a dramatic dish at a dinner party by cutting one into halves, wrapping it in foil and baking until the flesh is tender. Bring it to the table and scoop up the flesh which falls into strips like spaghetti, much to the astonishment of guests. Serve it with a rich tomato and meat sauce for a main dish. It does not have much flavor alone (but neither does spaghetti, eh?).

If one is confused by the names English or Italian marrow, remember they are just other names for squashes, the slim long pale ones that we do not grow much.

The squash in the photograph is an Italian marrow grown by a neighbor of mine, Mr. Mannino, who is an expert and exquisite gardener. He can not recall where he got his first seeds, but he saves them every year and this photograph is of one being saved for seed. He calls it a zucchini, but an Oregon seedman, Mr. Nichols, describes it and calls it *Lagenaria longissima*. One eats this as a summer squash when it is less than a foot long and tender enough to cut into slices and cook with olive oil, onions, and tomatoes.

All squashes have big, handsome foliage, and big yellow blossoms, but the three vines of this amazing squash with its large decorative heart-shaped leaves, trained on a trellis, were especially handsome. To find Mr. Mannino's garden growing so lushly between two tall apartment buildings is a pleasant discovery. It gives one faith that all is not lost to the "condo" mania. □

Mr. Mannino's 3 foot long "zucchini"

Photo by Larry Pautler

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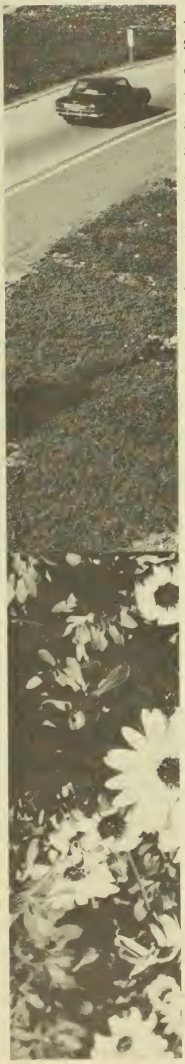
OUR DAISIES ARE DYING

by *Phillip Olivares*



AS YOU TRAVEL along Interstate 5 in north San Diego County during the coming months, you will encounter what appears to be a covering of late winter snow along the highway in the vicinity of Oceanside. On second glance you will discover that this covering is actually a plant called white trailing African daisy (*Osteospermum fruticosum*) 'Hybrid White.' CALTRANS first began planting these daisies in the San Diego County area in the spring of 1970 as an alternative to the then heavily-used Hottentot fig or large leaved ice plant (*Carpobrotus edulis*).

A native of South Africa, the African daisy appeared to be the answer to a multitude of CALTRANS' problems. It was a species of ground cover that thrived with little maintenance and required less water than ice plant. Its rapid growth rate provided nearly overnight protection from erosion and all but eliminated weed and dust control problems.

African daisies also provided an aesthetically-pleasing green carpet and provided a spectacular profusion of predominantly white flowers in late winter and early spring. The Oceanside planting project was actually designed as a 50/50 mix of 'Hybrid White' and purple trailing African daisy in order to reduce the snow white impact predominant on previous projects. The vigorous growth of the 'Hybrid White' eventually crowded out the less dominant purple variety.

Because of the early success realized with the initial plantings of white African daisy, its use spread rapidly in the southern California area. Approximately 300 acres of highway right-of-way were planted between 1970 and 1974 before the first indications of plant failure appeared.

Our first failure occurred in the San Bernardino area on a 35-acre project on Route 30 at Waterman Avenue in 1974. This project had been planted four years earlier and had performed very well until that time. Additional projects began to show signs of failure immediately thereafter throughout southern California.

Investigations into the problem indicated that waterborne molds (*Phytophthora* and *Pythium*) were infecting the plantings. It appeared that the undergrowth or thatch that had built up over the years was an ideal breeding ground for these molds during warm weather conditions and when there was moisture in the undergrowth. CALTRANS attempted treating this problem by regulated watering cycles and application of fungicides, to no avail. Suggestions on improving drainage and thinning of the undergrowth were considered but rejected because of the high cost in the former case and because the latter solution would require continuous effort.

In addition to the waterborne mold problem, it was soon discovered by Mr. H. S. Gill, Plant Pathologist at Riverside County, that our daisies also were susceptible to a fungus (*Whitzelinia selerotiorum*) which favored cool, moist, foggy weather. As reported in the March 1975 *Horticultural Notes* published by the University of California, "There have been no reports of control of this disease."

With this discovery, it was decided by CALTRANS to discontinue the use of trailing African daisies in 1975. Although most of the areas originally

planted still endure today, they have for the most part, lost much of their effect and original aesthetic impact.

Large areas of dried out thatch can be seen throughout projects such as the one in Oceanside. This distressed appearance is not only aesthetically unpleasing, but, if allowed to remain,could also present a source of future maintenance problems. Areas in Oceanside and San Bernardino are presently being interplanted with replacement varieties of ground cover or completely replaced.

Despite our problems, we feel African daisies are a valuable plant material and have been successful in small area plantings where good drainage and thatch removal can be a scheduled part of the maintenance program.

The loss of trailing African daisies as a substitute ground cover, although disappointing to say the least, has not had as great an impact as might be expected on future planting projects. In our efforts to reduce the amount of water required to maintain our landscaped highways, we have eliminated 75% of the ground cover areas on new projects. Many of these ground cover areas have been replaced with tree and shrub mass plantings or with prostrate shrub planting. CALTRANS' staff of landscape architects is continuously searching for and experimenting with new plant materials which integrate economical, environmental, and functional qualities to meet current design guidelines. □

Mr. Olivares is senior landscape architect for District Eleven, Department of Transportation, State of California.

Photo by LARRY PAUTLER

A New Lawn Grass

A NEW INTRODUCTION in grasses is *Paspalum vaginatum*, variety 'Adalayd'. It has recently been introduced from Australia and it now appears that this grass will be superior to some of the bermudas and zoysias now being used. It is a warm weather grass, as are the bermudas and zoysias, and is better in these ways:

Stays green during mild winters. Better winter color than bermudas and zoysias.

Adapts to all soil types, including those high in salts.

No known significant pests or diseases.

Fast coverage; grown from stolons, sod, or plugs.

Grows in full sun or filtered shade.

Excellent durability, suitable for play areas.

Deep root system, hence drought-tolerant.

This grass is planted the same as hybrid bermuda, 4 bushels of stolons being used to 1000 square feet, and stolons are available during the warm months. □

THIS INFORMATION is presented so that readers of California Garden may become aware of new plants that are being evaluated and it does not constitute a recommendation. If in the future additional information on 'Adalayd' becomes available it will be reported here.

G.J.

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Azaleas fulfill the gardener's dream

THE VERSATILE AZALEA

by *Skipper Cope*

ARE YOU LOOKING for a shrub that furnishes both color and attractive foliage as a foundation planting or landscape specimen? Then, consider azaleas! They meet these requirements with flair and beauty. Their variety is almost endless. Azalea plants range in size from small dwarfs to large spreading shrubs that attain 15 to 16 feet and some plants have small dense foliage while others have fairly large leaves. In the evergreen varieties colors range from white through pink to reds and purples, while the deciduous plants add yellow through orange to flame red to the spectrum.

Although there are a few hardy members in this branch of the rhododendron family, most of them prefer a milder more temperate climate where the temperature remains above zero. In fact, they do not like extremes of any kind—cold, heat, or moisture. In mild coastal areas many of them will take some sun. In the inland areas where the summers are hot and dry they thrive only under trees or other protection that provides partial shade, but not heavy shade. Like most flowering plants they need good overhead light or a little sun to bloom well.

Many coastal nurseries carry "sun azaleas." Please do not take that designation literally and plant them out in full sun. It only means that they are more sun tolerant than most and will take three or four hours of early morning or very late afternoon sun—never a hot midday sun. The azalea's natural habitat is a woody area, so they like moist, well drained soil—never soggy or dry. It is vital to the plants' well-being that the soil always be kept well mulched and never allowed to dry out. The plant is dependent upon its feeder roots for most of its sustenance and vitality so they must be protected from damage due to lack of moisture as well as damage from cultivation. For this reason the soil around the roots should not ever be distrubed. They require a cool acid soil. If one wishes to analyze the acid content a PH 4 or 5 is best, although a PH 6 can be acceptable.

The roots of azaleas are very dense and form a tight, compact ball that sends out hundreds of tiny feeder roots, most of which grow very close to the surface. These tender feeder roots can be lost or damaged when transplanting, so careful handling when replanting is important. The planting hole should be at least twice as large as the diameter of the ball and half again as deep. Fill the hole with organic material, such as leaf mold or peat moss (redwood may be used, but the others are preferable). Place the ball in the center of the hole keeping half of the ball above the level of top of the hole. Water well, fill in with more planting mixture, raising the ball as necessary to keep one-half of it above surface level. Cover completely with more planting mixture, water again and mulch at least 2 or 3 inches deep. The ball should be planted high because the feeder roots will draw it down to ground level as they grow and develop in the ideal growing medium that has been provided.

In warmer climates where azaleas bloom intermittently almost the year around they enjoy an acid fertilizer every two or three months. Where they go dormant in winter they should be fed three or four times during the growing season.

It is always best to select plants when they are in bloom to avoid unpleasant surprises. In choosing azaleas, a general rule of thumb that may be helpful to remember is this, smaller the leaves the more compact the growth will be. The larger and more widely spaced the leaves, the more open and spreading the growth will be. This does not apply to height because named varieties within the different hybrid groups vary widely. Your nurseryman will be able to furnish such information.

Here are a few clues to the general characteristics of the most popular hybrid groups:

• EVERGREEN

- **• Belgian Indica** — Very tender; lowest temperature 20 to 30° F. Foliage lush and full; large flowers 2 to 3 inches. Grows well in containers.
- **• Brooks** — More heat tolerant than most; good for inland areas. Compact growth. Large flowers 2 to 3 inches.
- **• Gable** — Small-leaved compact plants with medium sized profuse flowers 2 to 2½ inches.
- **• Gold Cup** — Bushy 2 to 4 foot plants. Excellent foliage. Abundant large flowers.
- **• Kurume** — Compact dense foliage. Very small leaves with profuse flowers 1 to 1½ inches.
- **• Macranthe** — Large flowers on low spreading plant. Gumpo is a dwarf 12 to 15 inches; Chugai and Suzuki 18 to 20 inches.
- **• Pericat** — Similar to Kurume; abundant larger flowers to 3 inches. Medium foliage.
- **• Rutherfordiana** — Like Gold Cup with smaller flowers.

▪ DECIDUOUS

The deciduous azalea flowers are borne in clusters. Few shrubs can equal these plants in show or range of color, especially the yellows through oranges to flame reds. In warmer climates some are only partly deciduous and some prefer only the colder climates. The nurseryman can recommend the ones that are suitable for your area.

- **▪ Knap Hill-Exbury** — Plants vary from spreading to upright 4 to 6 feet. Flowers 3 to 5 inches. White through pink, yellow to flame red.
- **▪ Mollis** — Upright growth 4 to 5 feet. Flowers 2½ to 4 inches. Chrome yellow through to poppy red.
- **▪ Occidentale** — Tall to 8 feet. Flowers 2½ to 4 inches range in color from white flushed rose or blotched yellow to red blotched orange.
- **▪ Ghent** — Extremely hardy. Upright growth variable in height to 12 feet.

(Continued on Page 60)

THE VERSATILE AZALEA

(Continued from Page 59)

Small flowers 2 to 3 inches borne usually in large clusters. Color range yellow, orange, umber, pink, and red.

Named cultivars of these hybrids can vary somewhat in height and growth pattern, but knowing the general characteristics of the parents can be helpful when choosing a plant for your particular space and landscape.

Azaleas are very responsive if their cultural requirements are met and will reward any gardener with many years of pleasure and beauty. □

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THE BOOK SHELF

Reviewed by *Russell MacFall*

THE AMAZING EARTHWORM

by *Lilo Hess*. New York: Chas. Scribner's Sons, 1979, $7.95, 48 pages.

Children and earthworms have a common interest: dirt. Every parent, except possibly the unutterably urban, has excavated a few earthworms from his or her progeny's pockets. Consequently the whole family can enjoy and learn from this gentle account of the life and sex habits of the creatures that fish die for and lawns benefit from. Ms. Hess, who lives on a Pennsylvania farm with, no doubt, its share of earthworms, has produced a slender book remarkable especially for its excellent illustrations of earthworms at every domestic crisis in their lives. All in all. earthworms have never had it so good.

ONWARD AND UPWARD IN THE GARDEN

by *Katherine S. White*. New York: Farrar, Straus Giroux, 1979, $12.95, 362 pages.

After retiring from a quarter century as an editor of *The New Yorker*, Katherine S. White discovered an interest in a new-to-her literary genre—garden catalogs. With her Maine farm gardens as her testing ground, she turned the new interest into a series of 14 articles on garden catalogs, books on gardening, and gardening in general, for the magazine she had served so long.

Mrs. White, wife of E. B. White, the author of such children's classics as *Stuart Little* and *Charlotte's Web*, began the articles in March, 1958, and the last appeared in March, 1970, after her death. Although writing for her was "an agonizing ordeal," she had the familiar essayist's gifts of gentle malice and tranquil understanding, as well as lifelong experience with green growing things.

As a taste of her style, try this: "From December to March, there are for many of us three gardens—the garden outdoors, the garden of pots and bowls in the house, and the garden of the mind's eye, whose midwinter vision, whether watery (like mine of the lily pond) or bedded in firm soil, is so brilliantly colored by the arrival soon after Christmas of the spring garden catalogues."

Mrs. White abhored frilly, over-hybridized flowers, flowers lacking the perfume of their ancestors, flowers arranged by rule, especially the rule of the National Garden Clubs, and garden books too large to read conveniently in bed. She loved flowers and flower growers and all living words about them. If you read only one garden book in 1980, this one is recommended for your delight.

A cultural calendar of care from our affiliates–

compiled by *Penny Bunker*

now is the time

BEGONIAS Margaret Lee

- to clean up all dried leaves, spent blooms, and dead wood.
- to prune for shape, and to encourage side growth; prune gradually–not more than 1/3 of the plant at one time to avoid too great a shock.
- to apply a top dressing to make sure roots are covered if the soil is light and porous; if heavy and packed, time to repot.
- to water when needed.
- to spray for insect and disease control.
- to start feeding; better to feed once a week with ¼ strength of any all-purpose plant food.

BONSAIS Dr. Herbert Markowitz

- to move the trees gradually into more sunlight to encourage healthy growth; take particular care of deciduous trees to avoid scorching of new leaves.
- to see that each tree has sufficient moisture for its needs.
- to watch for aphids and other pests.
- to protect from extreme cold–place in garage or under cover.
- to repot plants; shape, to conform to containers or design.
- to wait until April to fertilize; can use high nitrogen for foliage growth; high phosphorous fertilizers to set flowers and fruit.
- to use ½ strength fertilizer spaced several weeks apart, rather than use full strength only one time. Measure accurately; too much fertilizer can burn roots and cause leaf damage.

BROMELIADS Thelma O'Reilly

- to fertilize.
- to watch watering–do not let plants get too dry.
- to keep plants clean–trim off damaged leaves caused by cold weather.
- to spray for scale.
- to start pest control program–especially snails.

CACTUS & SUCCULENTS Verna Pasek

- to start watering as new growth starts.
- to fertilize with 10-10-10 to promote flowering.
- to watch for pests such as mealy bugs under leaves–control with equal parts of alcohol and water dabbed on with cotton swabs.
- to propagate plants from divisions and cuttings.
- to repot overgrown or root-bound plants; use a screen in bottom of pot with gravel or broken clay pieces to avoid washing out soil and nutrients.
- to protect delicate succulents from aphids–may use malathion.

CAMELLIAS Les Baskerville

- to maintain a regular watering program if no rains.
- to feed plants with fish or acid fertilizer.
- to keep blooms picked up to prevent petal blight.
- to prune plants as they finish blooming–to shape and to open plants to air.
- to feed iron to promote healthy green growth.
- to watch for loopers–spray with malathion if present.
- to plant new bushes while still in bloom.

DAHLIAS Abe Janzen

- to remove tubers from storage and place in sprouting medium –use vermiculite, sand, or other starting material.
- to watch moisture so tubers will not rot.
- to prepare planting area–fork in humus and fertilizers, especially super phosphates and potash (use 2½ lbs for each 100 square feet of ground.
- to drive stake into ground before planting tubers.
- to plant tubers two or three weeks after sprouting–dig a hole 6-inches deep, mix in bone meal, then place tuber on its side with sprout up 2-inches from stake. Cover with 3-inches of soil, moisten, but do not keep wet.
- to protect from snails.

EPIPHYLLUMS Fern LaBorde

- to replace name tags as needed.
- to tie up branches and groom blades.
- to fertilize with 0-10-10 for blooms.
- to repot your mature plants if no bloom last year.
- to use potting material that will serve three main functions: provide mechanical support, serve as reservoir for fertilizer supply, and store moisture.
- to wait to trim plants until all danger of frost is past.

FERNS Ray Sodomka

- to keep surrounding areas damp to maintain humidity.
- to remove dead fronds.
- to fertilize with high nitrogen liquid or pellets.
- to use insecticide for aphids and snails.
- to divide, repot, or add humus to pots.
- to plant fern spore.

FUCHSIAS William Selby

- to place cuttings, started during the winter, into larger containers.
- to keep new growth pinched back, forcing them to branch and make plant bushy.
- to start a spray program at the first sign of pests and insects.
- to maintain a good watering schedule.
- to fertilize regularly at this time as it is critical for good lush growth and strong blooms.
- to remember not to fertilize a dry plant.
- to continue taking cuttings.

GERANIUMS Carol Roller

- to water thoroughly when plants become somewhat dry. Keep foliage as dry as possible.
- to feed with a balanced fertilizer in liquid form, using half strength twice as often without allowing plants to develop deficiencies.
- to continue a pest control program for sucking and chewing insects, snails, and slugs–using products to the manufacturers' directions.

GERANIUMS (continued)

- to selectively prune and pinch zonals and ivies for future bloom.
- to avoid cutting regals because the flowers will be lost.
- to remove faded flowers and old discolored leaves.
- to continue to rotate pots on a regular basis to produce well-shaped plants.
- to enjoy your geraniums at the height of their season.

GESNERIADS Mike Ludwig

- to clean debris from around the plants.
- to repot those root-bound plants; cut off all dead roots that are looking brown and soft.
- to start feeding plants as new growth begins.
- to trim plants and take cuttings.
- to clean up the growing area and spray for mildew and mold.
- to spray for aphids before new growth is out; bait for slugs and snails.
- to fertilize in April with trace elements if you didn't repot earlier.
- to use a liquid chelated iron if growing tip show yellow; spray the foliage twice at three day intervals. If leaf shows green only in the veins, it has been watered too much.

HEMEROCALLIS Sanford Roberts

- to clean up clumps. Combat aphids with a systemic spray.
- to dig and divide clumps over three years old. Separate to two to four fans. Replant much like planting roses. Cover roots not more than two inches deep. The plants will put out new roots that seek a greater depth.
- to add humus, if available, compost (not manure) to fertilize with 5-10-10 formula.
- to plant new cultivars—order from California growers.
- to heal in roots in moist sand in shade. If plants are received during a prolonged hot spell—plant later when it is cooler.

IRIS San Diego-Imperial Counties Iris Society

- to watch for caterpillars—they will destroy unopened buds. Systemic sprays applied as a drench will usually free iris of aphids and thrips.
- to fertilize with a low nitrogen fertilizer or liquid fish.
- to give water if season is dry.
- to keep beds clean of weeds and old fans.
- to give Japanese and Louisiana iris acid food; you can use camellia-type fertilizer.
- to feed spurias.

ORCHIDS Charlie Fouquette

- to feed cymbidiums with low nitrogen fertilizer.
- to move cymbidiums into a protected shaded area to protect blooms.
- to clean up around pots, plants and benches.
- to check on slugs and snails especially after a rain.
- to place stakes to support spikes as they develop.
- to repot cattleyas that are showing new eyes.
- to protect phalaenopsis plants that are in spike from drafts and temperature changes to prevent bud blast.
- to shade areas that are becoming too warm, inside and outside hot houses.

ROSES Dee Thorson

- to supply plenty of water for rapidly growing bushes.
- to give liquid rose food when new growth is about 2 inches long.
- to apply organic fertilizer to established plants if no application was given at pruning time.
- to use a systemic insecticide as a soil drench to eliminate aphids, or hose them off with a strong stream of water.
- to begin early mildew prevention by using Parnon or Benlate or wash bushes with Basic H solution.
- to give each bush ¼ cup of blood meal just before buds start to show color—this will intensify color of blooms.
- to check foliage for signs of worms or rose slugs. Spray with malathion or Sevin—be sure to use the powder on new growth to prevent burning new foliage.
- to keep check on hybrid tea roses, disbud while sidebuds are immature.

VEGETABLES George James

- to make a spring planting of leaf vegetables from started plants of broccoli, cabbage, cauliflower, celery, chard, collards, kale, or lettuce.
- to start in pots or flats (in a protected location) seeds of beans, corn, cucumbers, eggplant, peppers, squash, and tomato so they will be ready to set out when the weather is suitable.
- to set out plants of eggplant, peppers, tomato, and summer squash; cover to protect from frost.
- to plant onion and garlic sets in the garden.

GREEN THUMB ITEMS California Green Thumb Society

- to prune spring flowering shrubs and trees—using sprigs for house decorations. After blooming is finished, mulch with leaf mold and manure—water well.
- to cut back poinsettia, removing all last year's growth to within two joints of the old wood.
- to finish in March the planting of bare-root trees and shrubs.
- to divide chrysanthemums—make divisions and take cuttings from old plants.
- to set out annuals such as zinnias, pansies, marigolds, and petunias for spring and early summer color.
- to mulch and reseed lawns in April where necessary.
- to plant perennials—carnations, gerberas, marguerites, Shasta daisies.
- to tie up the long foliage of daffodils and narcissus to be neat, but DO NOT cut off until it has naturally withered and dried—leaves feed bulb for the next season's flowers.
- to feed nearly everything that was not fed in March.
- to water bedding plants and small trees and shrubs if rains have ended.

BACK COVER: *Cattleya Harrisoniae*—
"One of the oldest Cattleyas in cultivation that still merits attention on account of its beauty." *The Garden*, November 1895. Drawn by H. G. Moon.

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